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EXAMINER	
ABRAHAM, AMJAD A	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/570,232	UENO, TAKAKUNI	
	Examiner	Art Unit	
	AMJAD ABRAHAM	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 February 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *30 November 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/28/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1 and 5 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. **In claim 1 (page 2-line 10) and claim 5 (line 15) the term "unnoticeable" is indefinite. It is unclear as to what degree unnoticeable has to be. For example, is it unnoticeable to the human eye?**

3. Claims 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. Claim element “means for continuously changing the mask image of the planar plotting mask in synchronism with movement of the planar plotting mask" is a means (or step) plus function limitation that invokes 35 U.S.C 112, sixth paragraph **(See specifically claim 5 lines 12-14)**. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function. Specifically, the specification lacks disclosure as to what structure is needed in order to change the mask in synchronism with the movement of the plotting mask. For example, is there a controller that communicates between the movement of the mask and the shutter system?

4. Claims 5-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

b. Claim element "means for making unnoticeable boundary areas among adjacent plotted areas of optically-cured resin layers within a finally-obtained stereolithographic three-dimensional object" is a means (or step) plus function limitation that invokes 35 U.S.C 112, sixth paragraph **(See specifically claim 5 lines 15-16 and claim 6 lines 2-4)**. However, the written description fails to disclose the corresponding structure, material, or acts for the claimed function.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 4, 5, and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kihara et al. (Japanese Patent Publication JP 03-281329—made of record by applicant and translated by USPTO certified translator).

4. Regarding claim 1, Kihara teaches an optical three-dimensional shaping method (**stereolithographic)** process for forming a three dimensional object. The three-D shaping process exposes a light-curing **(photocurable)** resin to a light source by way of a two-axis direction **(planar)** exposure mask. **(See claim 1)**.

a. Kihara also goes on to teach

i. That the planar plotting mask can be continuously changed when projecting the mask image. **(See claim 1).**

ii. That the planar plotting mask moves continuously with respect to the resin surface during the 3D shaping process. **(See page 8 line 20 to page 9 line 11→ discussing the use of a controller, XY stage driver, and shutter plate to move the mask continuously to cure the resin.**

b. With respect to claim 1, Kihara does not explicitly teach performing an optical building operation such that boundary areas among adjacent plotted areas in the optically-cured resin layer become unnoticeable in the final product.

c. However, Kihara does teach that it is common to slice the 3D object data into a vast number of matching optical masks in order to create a smooth curved surface. Furthermore, it is well known in the art of stereolithography that the boundary layers between adjacent plotting areas are to be made as smooth as possible in order to create a 3D object without any seam lines. Thus, it would

have been obvious from the teachings of Kihara to include perform a building operation such that the boundary areas of adjacent plotted areas are unnoticeable.

5. Regarding 4, Kihara teaches the use of a liquid crystal shutter with the mask. **(See page 4 line 20).**

6. Regarding claim 5, Kihara teaches an optical three-dimensional shaping apparatus. **(See claim 1 and figure 1).**

d. Kihara also teaches

iii. A photocurable resin supply means. **(See figure 1 (part # 2) disclosing a liquid resin supply vessel. Also see page 5 line 9 disclosing that resin is typically supplied layer by layer.)**

iv. A light source. **(See figure 1 (part number 4))**

v. A two axis exposure mask (planar plotting mask). **(See part number 3 of figure 1 disclosing a liquid shutter plate that serves as the optical mask.)**

vi. Moving means for moving mask. **(See part numbers 8, 10, and 11 of figure 1 disclosing moving means for mask/shutter system. Also see page 7 lines 4-24 disclosing the use of a XY stage driver to move the mask and scan the surface of the light curing resin in a two-dimensional direction.)**

(1) The claim limitation, "moving means for continuously moving the planar plotting mask", is a means plus function limitation that

invokes 35 U.S.C. 112 6th paragraph and the corresponding structure is seen in page 44 lines 3-24 of applicant's specification. The use of a motor in conjunction with a drive source and a guide system is disclosed as the means necessary to move the planar plotting mask.

vii. Means for continuously changing the mask in synchronism with the movement of the mask. **(See part number 6 in figure 1 disclosing a liquid crystal shutter driver. See also page 9 lines 12-24 discloses the changing of a shutter system that is controlled by inputted shape data.)**

(2) The claim limitation, "means for continuously changing the mask image of the planar plotting mask in synchronism with movement of the planar plotting mask", is a means plus function limitation that invokes 35 U.S.C. 112 6th paragraph and the corresponding structure is seen in page 46 lines 12-25 of applicant's specification. The use of a shutter system (liquid-crystal shutter or a digital micromirror shutter) in conjunction with stored data on a computer is disclosed as the means necessary to move the continuously change the mask.

e. With respect to claim 5, Kihara does not explicitly disclose a means for making unnoticeable boundary areas among adjacent plotted areas of resin layers.

f. However, Kihara does teach that it is common to slice the 3D object data into a vast number of matching optical masks in order to create a smooth curved surface. Furthermore, it is well known in the art of stereolithography that the boundary layers between adjacent plotting areas are to be made as smooth as possible in order to create a 3D object without any seam lines. Thus, it would have been obvious from the teachings of Kihara to include perform a building operation such that the boundary areas of adjacent plotted areas are unnoticeable. Because this one would have altered the splicing data from the CAD system in order to account for possibly boundary issues in the normal course of the CAD design of the stereolithography system.

7. Regarding 8, Kihara teaches the use of a liquid crystal shutter with the mask. **(See page 4 line 20).**

8. Claims 1 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (European Patent Application EP 1057615 A2).

9. ***Please note that examiner is using Ueno (USP No. 6,627,376 B1) as an English Equivalence to (EP 1057615 A2).***

10. Regarding claim 1, Ueno teaches a stereolithographic method for forming a stereolithographic three-dimensional object by means of sequentially repeating, until a predetermined stereolithographic three-dimensional object is formed **(See abstract disclosing a method for forming an object by successively supplying a resin layer)**, optical building processes of exposing a surface of a photocurable resin

composition by way of a planar plotting mask under control to thus form an optically-cured resin layer having a predetermined cross-sectional profile pattern **(See abstract, disclosing the fact that the a planar (plane-exposed) mask is utilized to harden a photo-curable resin via a light source.)**; applying a photocurable resin composition for one layer over the optically-cured resin layer **(See abstract, disclosing successively adding layers)** ; and exposing the surface of the photocurable resin composition to light by way of the planar plotting mask under control **(See abstract, "the unhardened resin layer is plane-exposed to light through a mask")**, to thus further form an optically-cured resin layer having a predetermined cross-sectional profile pattern **(See abstract, a three-dimensional object is formed through stereolithography).**

g. the method comprising:

viii. using a planar plotting mask **(Plane-exposure mask)**, which can continuously change a mask image, as a planar plotting mask; **(See column 10 line 50 to column 11 line 13, disclosing that a plane-exposed mask is used to project the image on the photohardenable resin. See also abstract, disclosing that the "mask is formed on a light transmissible member on the basis of stereolithographic data for one layer of photohardenable resin." Clearly the plane-exposed mask will change continuously in response to the stereolithographic data.)**

ix. performing building operation of continuously moving the planar plotting mask with reference to the surface of the photocurable resin composition during at least one of the optical building processes and of exposing the surface of a photocurable resin composition to light by way of the planar plotting mask while continuously changing a mask image of the planar plotting mask in accordance with a cross-sectional profile pattern of an optically-cured resin layer to be formed and in synchronism with movement of the planar plotting mask, to thus form an optically-cured resin layer having a predetermined cross-sectional profile pattern; and

(3) **(See column 12 lines 53-67 and column 13 lines 1-6→ disclosing that an image drawing mask forming system (B) equipped with the ability to move in certain positions anticipating a moving unit system and equipped with a CAD controller which would be capable of changing the images on the mask plate system in a synchronous fashion with the movement of the mask forming system.)**

(4) **(See also, column 6 lines 38-63→ disclosing an exposure means for exposing the unhardened resin layer to light through the mask to harden the unhardened resin layer and form the three-dimensional object.)**

h. Ueno does not explicitly disclose:

x. The step of performing an optical building operation such that boundary areas among adjacent plotted areas in the optically-cured resin layer become unnoticeable in a finally-obtained stereolithographic three-dimensional object.

(5) **However, Ueno does disclose that a common problem in the art, especially when dealing with 3D objects with complicated shapes and separately mounted portions, is that adjacent layers must be kept at different temperatures at the boundaries in order to create a smooth object. (See column 8 lines 16-54). Furthermore, it is well known in the art of stereolithography that the boundary layers between adjacent plotting areas are to be made as smooth as possible in order to create a 3D object without any seam lines. Thus, it would have been obvious from the teachings of Ueno to include perform a building operation such that the boundary areas of adjacent plotted areas are unnoticeable.**

11. Regarding claim 5, Ueno teaches a stereolithographic apparatus

i. comprising:

xi. photocurable resin composition supply means for sequentially supplying a photocurable resin composition of one layer over a mount table or an optically-cured resin layer; **(See figure 5 and column 10 line**

60 to column 11 line 5 disclosing that the apparatus is comprised of a supply unit (C and D).

xii. a light source; **(Column 14 lines 33-36 and figure 5)**

xiii. a planar plotting mask capable of continuously changing a mask image; **(Mask forming means—see part number 41 of figure 5) and (See column 10 line 50 to column 11 line 13, disclosing that a plane-exposed mask is used to project the image on the photohardenable resin. See also abstract, disclosing that the "mask is formed on a light transmissible member on the basis of stereolithographic data for one layer of photohardenable resin." Clearly the plane-exposed mask will change continuously in response to the stereolithographic data.)**

xiv. moving means for continuously moving the planar plotting mask with respect to a surface of the photocurable resin composition; **(Support table—see part number 46 of figure 5. Also see column 11 lines 14-38 disclosing the use of a motor and drive system to move mask system.)**

(6) The claim limitation, "moving means for continuously moving the planar plotting mask", is a means plus function limitation that invokes 35 U.S.C. 112 6th paragraph and the corresponding structure is seen in page 44 lines 3-24 of applicant's specification. The use of a motor in conjunction with a drive source and a guide

system is disclosed as the means necessary to move the planar plotting mask.

xv. means for continuously changing the mask image of the planar plotting mask in synchronism with movement of the planar plotting mask; and **(See column 12 lines 53-67 and column 13 lines 1-6→ disclosing that an image drawing mask forming system (B) equipped with the ability to move in certain positions anticipating a moving unit system and equipped with a CAD controller which would be capable of changing the images on the mask plate system in a synchronous fashion with the movement of the mask forming system. See also, column 6 lines 38-63→ disclosing an exposure means for exposing the unhardened resin layer to light through the mask to harden the unhardened resin layer and form the three-dimensional object.)**

(7) The claim limitation, "means for continuously changing the mask image of the planar plotting mask in synchronism with movement of the planar plotting mask", is a means plus function limitation that invokes 35 U.S.C. 112 6th paragraph and the corresponding structure is seen in page 46 lines 12-25 of applicant's specification. The use of a shutter system (liquid-crystal shutter or a digital micromirror shutter) in conjunction with stored data on a computer is disclosed as the means necessary to move the continuously change the mask.

j. Ueno does not explicitly teach means for making unnoticeable boundary areas among adjacent plotted areas of optically-cured resin layers within a finally-obtained stereolithographic three-dimensional object.

(8) **However, Ueno does disclose that a common problem in the art, especially when dealing with 3D objects with complicated shapes and separately mounted portions, is that adjacent layers must be kept at different temperatures at the boundaries in order to create a smooth object. (See column 8 lines 16-54). Furthermore, it is well known in the art of stereolithography that the boundary layers between adjacent plotting areas are to be made as smooth as possible in order to create a 3D object without any seam lines. Thus, it would have been obvious from the teachings of Ueno to include perform a building operation such that the boundary areas of adjacent plotted areas are unnoticeable.**

(9) *Furthermore, the apparatus taught in Ueno has the ability for making boundary areas unnoticeable via intensity control through the shutter system disclosed in figures 17 and 18.*

12. Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (European Patent Application EP 1057615 A2) in view of Pollack et al (European Patent Application EP 1192041 B1).

13. ***Please note that examiner is using Ueno (USP No. 6,627,376 B1) as an English Equivalence to (EP 1057615 A2).***

14. Regarding claim 2, Ueno does not teach wherein, in order to make unnoticeable the boundary area between the adjacent plotted areas in the optically-cured resin layer in a finally-obtained stereolithographic three-dimensional object, at least one of operations (i) to (iii) provided below is performed: (i) operation for making a total intensity of light radiated onto boundary areas among adjacent plotted areas in an optically-cured resin layer equal or analogous to the intensity of light radiated onto areas other than the boundary areas; (ii) operation for making the shape of the boundaries between the adjacent plotted areas in the optically-cured resin layer curve; and (iii) operation for staggering positions of the boundary areas among the adjacent plotted areas in the optically-cured resin layer in vertically-stacked optically-cured resin layers.

k. However, Pollack teaches that through the adjustment of light intensity via gray-scale exposure and the high resolution of a LCD display, it is possible to obtain the highest pattern resolution, particularly for objects with outer dimensions (boundaries) in the millimeter range or below. **(See paragraph [0022]).** From this teaching, it would have been obvious to one having the ordinary skill in the art that controlling intensity of adjacent boundary areas will lead to improved boundary definition and make the boundary line unnoticeable.

l. Pollack goes on to teach that controlling the exposure of the light source (intensity profile) leads to improved resolution and precision. **(See paragraph [0003])**

m. Ueno and Pollack are analogous art because they are from the same field of endeavor which is creating a three-dimensional object by using a mask in a stereolithography process. At the time of the invention, it would have been obvious to one having the ordinary skill in the art, having the teachings of Ueno and Pollack before him or her, to modify the teachings of Ueno to include the teachings of Pollack for the benefit of creating a high pattern resolution 3D object with minimal boundary lines (defects). The motivation for doing so would be to create a uniform 3D object without seam or weld lines. Therefore, it would have been obvious to combine Ueno with Pollack because one would have been motivated to create a uniform product without seam lines.

15. Regarding claim 6, Ueno does not teach wherein the means for making unnoticeable boundary areas among adjacent plotted areas of optically-cured resin layers within a finally-obtained stereolithographic three-dimensional object is means for performing at least one of operations (i) to (iii) provided below: (i) operation for making a total intensity of light radiated onto boundary areas among adjacent plotted areas in an optically-cured resin layer equal or analogous to the intensity of light radiated onto areas other than the boundary areas; (ii) operation for making the shape of the boundaries between the adjacent plotted areas in the optically-cured resin layer curve; and (iii)

operation for staggering positions of the boundary areas among the adjacent plotted areas in the optically-cured resin layer in vertically-stacked optically-cured resin layers.

n. However, Pollack teaches that through the adjustment of light intensity via gray-scale exposure and the high resolution of a LCD display, it is possible to obtain the highest pattern resolution, particularly for objects with outer dimensions (boundaries) in the millimeter range or below. **(See paragraph [0022]).** From this teaching, it would have been obvious to one having the ordinary skill in the art that controlling intensity of adjacent boundary areas will lead to improved boundary definition and make the boundary line unnoticeable.

o. Pollack goes on to teach that controlling the exposure of the light source (intensity profile) leads to improved resolution and precision. **(See paragraph [0003])**

p. Ueno and Pollack are analogous art because they are from the same field of endeavor which is creating a three-dimensional object by using a mask in a stereolithography process. At the time of the invention, it would have been obvious to one having the ordinary skill in the art, having the teachings of Ueno and Pollack before him or her, to modify the teachings of Ueno to include the teachings of Pollack for the benefit of creating a high pattern resolution 3D object with minimal boundary lines (defects). The motivation for doing so would be to create a uniform 3D object without seam or weld lines. Therefore, it would have been obvious to combine Ueno with Pollack because one would have been motivated to create a uniform product without seam lines.

16. Claims 3-4 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (European Patent Application EP 1057615 A2) in view of Pollack et al (European Patent Application EP 1192041 B1) in further view of Lercel (USP No. 6,461,797).

17. Regarding claim 3, the combination of Ueno and Pollack does not teach wherein a planar plotting mask, in which a plurality of micro-optical shutters capable of blocking or allowing transmission of light into microdot areas are arranged in a planar manner, is used as the planar plotting mask; and the surface of the photocurable resin composition is exposed to light while a mask image is continuously changed in accordance with a cross-sectional profile pattern to be formed by means of the plurality of micro-optical shutters during continuous movement of the planar plotting mask.

q. However, Lercel teaches the use of a plurality of micro-mirror shutters to allow for selective exposure of light towards photosensitive or UV curable materials. **(Column 7 lines 30-67, Column 8 lines 16-30, Column 9 lines 18-20, and figure 8)**

r. Ueno/Pollack and Lercel are analogous art because they are from the same field of endeavor which is forming an object via lithography. At the time of the invention, it would have been obvious to one having the ordinary skill in the art, having the teachings of Ueno/Pollack and Lercel before him or her, to modify the teachings of Ueno/Pollack to include the teachings of Lercel for the benefit

achieving increased light intensity control in order to incrementally alter light intensity in order to mesh the adjacent boundary layers together without a noticeable boundary.

18. Regarding claim 4, the combination of Ueno and Pollack does not explicitly teach wherein the planar plotting mask is a planar plotting mask where a liquid-crystal shutter or a digital micro mirror shutter is arranged in a planar manner.

19. However, Lercel teaches the use of a liquid crystal shutter. **(See figure 7 and column 7 lines 55-67).**

s. **Both micro-mirror shutters and liquid crystal shutters are revered as analogous art as to each other and its use in lithography systems. It is well known in the art to use either shutter system depending on the complexity and size of the 3d object being fabricated.**

20. Regarding claims 7, the combination of Ueno and Pollack does not teach wherein the planar plotting mask is a planar plotting mask in which a plurality of micro-optical shutters capable of blocking or allowing transmission of light into microdot areas are arranged in a planar manner.

t. However, Lercel teaches the use of a plurality of micro-mirror shutters to allow for selective exposure of light towards photosensitive or UV curable materials. **(Column 7 lines 30-67, Column 8 lines 16-30, Column 9 lines 18-20, and figure 8)**

u. Ueno/Pollack and Lercel are analogous art because they are from the same field of endeavor which is forming an object via lithography. At the time of

the invention, it would have been obvious to one having the ordinary skill in the art, having the teachings of Ueno/Pollack and Lercel before him or her, to modify the teachings of Ueno/Pollack to include the teachings of Lercel for the benefit achieving increased light intensity control in order to incrementally alter light intensity in order to mesh the adjacent boundary layers together without a noticeable boundary.

21. Regarding claim 8, the combination of Ueno and Pollack does not explicitly teach wherein the planar plotting mask is a planar plotting mask where a liquid-crystal shutter or a digital micro mirror shutter is arranged in a planar manner.

22. However, Lercel teaches the use of a liquid crystal shutter. **(See figure 7 and column 7 lines 55-67).**

v. **Both micro-mirror shutters and liquid crystal shutters are revered as analogous art as to each other and its use in lithography systems. It is well known in the art to use either shutter system depending on the complexity and size of the 3d object being fabricated.**

23. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ueno (European Patent Application EP 1057615 A2) in view of Hennings (US Patent 3,718,396).

24. Regarding claim 9, Ueno does not teach wherein a light-condensing lens which is interposed between a light source and the planar plotting mask and can be continuously

moved in synchronism with the planar plotting mask; and a projection lens which is interposed between the planar plotting mask and the surface of the photocurable resin composition and which can be continuously moved in synchronism with the planar plotting mask.

w. However, Hennings teaches the use of a condensing lens followed by a mask, which is followed by a projection lens to project an image to a substrate. **(See figure 2)**

xvi. The art taught be Hennings shows that it is well known to have a lithography set up which utilizes a projection and condensing lens to alter the intensity of a light source. Therefore, it would have been obvious to one skilled in the art to use a lens setup of this nature in order to have a lithography apparatus with a high degree of intensity and illumination control..

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AMJAD ABRAHAM whose telephone number is (571)270-7058. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:00 PM Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Phillip Tucker can be reached on (571) 272-1095. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AAA

/Philip C Tucker/
Supervisory Patent Examiner, Art Unit 1791